

II. Claims 1-16, 33, and 34 comply with the enablement requirement.

In the Office Action, the Examiner rejected claims 1-16, 33, and 34 under 35 U.S.C. § 112 as failing to comply with the enablement requirement. The Examiner stated that the steps to calculate enrichment or depletion are not enabled. Claim 1 is an independent claim upon which claims 2-15, 33, and 34 depend. Please note that claim 1 recites wherein the parameter comprises enrichment or depletion of the isotope. Please also note that independent claim 17 recites wherein the parameter comprises enrichment or depletion of the isotope. The Specification of the Application teaches that "[t]he reference cell also allows a more accurate determination of isotopic enrichment or depletion relative to the reference gas because the absolute isotopic ratio of the reference gas need not be known." (Application, page 9, para. 29).

It would be readily understood by one of ordinary skill in the art to calculate enrichment or depletion of the isotope. For example, Isotopic Ratio Mass Spectroscopy, which is a well known method for determining isotopic composition, often includes calculation of isotopic enrichment or depletion. In Isotopic Ratio Mass Spectroscopy, it is well known to use mathematical steps to calculate isotopic enrichment or depletion. Such Isotopic Ratio Mass Spectroscopy mathematical steps are well known to one of ordinary skill in the art. Moreover, it would be readily understood by one of ordinary skill in the art how to use the mathematical steps for calculating isotopic enrichment or depletion from Isotopic Ratio Mass Spectroscopy to calculate the parameter comprising enrichment or depletion of the isotope from the downstream optical detector signals. This is confirmed in the attached Affidavit of Christopher Jones wherein Christopher Jones attests

that it would be readily understood by one of ordinary skill in the art to calculate enrichment or depletion of the isotope.

Therefore, Applicants respectfully submit that independent claims 1 and 17 are allowable as they satisfy the requirements of 35 U.S.C. § 112. Moreover, since independent claims 1 and 17 are thus believed to be allowable, intervening dependent claims 2-16 and 18-35 must *a fortiori* also be allowable, since they carry with them all the limitations of the independent claims to which they ultimately refer.

III. Claims 17-28, 32, and 35 are not anticipated by *Cooper*.

In the Office Action, the Examiner rejected claims 17-28, 32, and 35 under 35 U.S.C. § 102 as being anticipated by *Cooper*. Applicants submit that the claims, as amended, are not anticipated by *Cooper* because *Cooper* fails to disclose each and every limitation of these claims.

Claim 17 is an independent claim and has been amended to recite wherein the parameter comprises enrichment or depletion of the isotope. Nothing in *Cooper* teaches or suggests calculating a parameter indicative of the presence of the isotope in the fluid using measurements made in steps (e) and (f), wherein the parameter comprises enrichment or depletion of the isotope as set forth in claim 17. Instead, *Cooper* teaches or discloses an *isotope ratio measurement*. (*Cooper*, claims 1 and 2; col. 1, lines 6-8 and 62-64; col. 4, line 45). One of ordinary skill in the art would know that isotopic ratio measurements are different than calculating isotopic enrichment or depletion. As taught by Applicants' specification, "[t]he reference cell also allows a more accurate determination of isotopic enrichment or depletion relative to the reference gas because the absolute

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isotopic ratio of the reference gas need not be known." (Application, page 9, para. 29, emphasis added).

Therefore, because all limitations of independent claim 17 are not disclosed by *Cooper*, Applicants respectfully submit that independent claim 17 is allowable. Moreover, since independent claim 17 is thus believed to be allowable, dependent claims 18-28, 32, and 35 must *a fortiori* also be allowable, since they carry with them all the limitations of the independent claim to which they ultimately refer.

IV. Claims 29-31 are patentable over *Cooper*.

In the Office Action, the Examiner rejected claims 29-31 under 35 U.S.C. § 103 as being unpatentable over *Cooper*. Applicants submit that, contrary to MPEP section 2143, the Examiner failed to make a *prima facie* case of obviousness in rejecting such claims in that the Examiner failed to cite references that teach or suggest all of the elements recited in the rejected claims.

Claims 29-31 are dependent upon independent claim 17. As pointed out in Section III. above, nothing in *Cooper* teaches or suggests calculating a parameter indicative of the presence of the isotope in the fluid using measurements made in steps (e) and (f), wherein the parameter comprises enrichment or depletion of the isotope, as recited in independent claim 17.

Applicants therefore respectfully submit that the Examiner failed to articulate a *prima facie* case of obviousness in rejecting claims 29-31 in the Office Action, because, contrary to MPEP section 2143, the Examiner has failed to cite references that teach or suggest all of the elements recited in the rejected claims. Since independent claim 17 is submitted to be allowable, dependent

claims 29-31 must *a fortiori* also be allowable, since they carry with them all the limitations of independent claim 17.

V. Claims 36-60 are allowable.

Claims 36 and 47 are independent claims upon which claims 37-46 and 48-60 depend, respectively. Applicants respectfully submit that all such claims are allowable over the art of record.

VI. Conclusion

Applicants believe that in view of the foregoing remarks all pending claims are allowable and that the present application is in full condition for allowance, which action Applicants earnestly solicit. If the Examiner has any questions or comments regarding the foregoing, the Examiner is requested to telephone the undersigned.

In the course of the foregoing discussions, Applicants may have at times referred to claim limitations in shorthand fashion or may have focused on a particular claim element. This discussion should not be interpreted to mean that the other limitations can be ignored or dismissed. The claims must be viewed as a whole, and each limitation of the claims must be considered when determining the patentability of the claims. Moreover, it should be understood that there may be other distinctions between the claims and the prior art which have yet to be raised, but which may be raised in the future.

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If any fees are inadvertently omitted or if any additional fees are required or have been overpaid, please appropriately charge or credit those fees to Conley Rose, P.C. Deposit Account Number 03-2769.

Respectfully submitted,



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